

CPTED

CRIME PREVENTION
THROUGH
ENVIRONMENTAL
DESIGN

CPTED IN MINNEAPOLIS

A Progress Report

May 1976

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INTRODUCTION

In July of 1975 the Governor's Commission on Crime Prevention and Control received a grant from the Law Enforcement Assistance Administration to conduct pioneering work in an area of crime control known as Crime Prevention Through Environmental Design (CPTED). The initial phase of this work is focused on Minneapolis. This document is a progress report which describes the program and identifies neighborhoods in Minneapolis for which demonstration CPTED plans will be developed. Subsequent reports will detail the nature of crime-environment problems on a citywide basis, will propose strategies for dealing with these problems, and will present crime reduction plans for demonstration neighborhoods.

CRIME PREVENTION THROUGH ENVIRONMENTAL DESIGN

THE PURPOSE OF CPTED

The magnitude of the crime problem and the concern it generates among the citizenry has been documented repeatedly in recent years. Relative to cities its size, Minneapolis ranks high in terms of the magnitude of crime reported to police.

The costs of crime are not limited to the losses suffered by victims. Spiraling insurance rates and rising costs of maintaining adequate police protection borne by the entire community must also be considered. Crime imposes substantial indirect costs as well. These costs stem from changes in the attitudes and behavior of persons who may never have been directly involved in a crime, but who incur losses because they try to prevent their own victimization. These changes range from curtailing evening activities and avoiding certain areas to, in some cases, moving out of a neighborhood.

Efforts to combat crime generally have focused on the offender. Law enforcement agencies have been expanded and new enforcement strategies developed with the goal of reducing crime by increasing the risk of apprehension. Efforts have been made to increase the efficiency of courts to ensure the swiftness of punishment. Correctional systems have been modified to emphasize rehabilitation of inmates.

CPTED changes the focus of crime control efforts from the criminal to the environment in which criminal acts occur. This environmental approach assumes that a criminal act requires a combination of criminal motivation and opportunity. The presence of opportunity may frequently precipitate crime.

The purpose of CPTED is to reduce crime by minimizing criminal opportunity. Its focus is limited to crimes, such as burglary, where opportunity appears to be important. CPTED is generally restricted to stranger-to-stranger crimes. Not only are stranger-to-stranger crimes more often a function of opportunity, but these crimes appear to engender the greatest amount of public fear. The goal of CPTED then, is to limit criminal opportunity by reshaping the social and physical environment. In so doing, not only should crime be reduced, but the fear associated with these crimes also may be diminished.

FUNDAMENTALS OF CPTED

The impetus for CPTED came largely from work produced for LEAA by architect Oscar Newman and his colleagues. Newman headed a team of architects and social scientists who studied "the extent to which the physical design of residential complexes and their disposition in the urban setting affected the frequency of crime and vandalism." The study indicated that appropriate building design and site planning can create what Newman calls "defensible space." This is space that encourages protective attitudes and practices on the part of residents.

The CPTED program which grew from Newman's work is much broader than defensible space. It incorporates a variety of anti-crime resources in addition to physical design: police, community groups, and target hardening strategies. CPTED seeks to combine these resources in such a way as to create an environment minimally supportive of criminal activity.

For example, when approaching a residential burglary problem through CPTED, the following strategies would be considered:

1. Means for modifying existing structures such as installing stronger doors and locks, alarms, better lighting, erecting physical or symbolic barriers, closing streets. .
2. Community participation techniques to encourage mutual surveillance and support and to increase the familiarity of neighbors with one another.
3. Alternative police patrol practices.
4. Performance standards, zoning changes and design guidelines for future development.

As is suggested by the example, CPTED depends as much on changing the way the environment is used as on changing the actual environment. Even when physical changes are proposed, their purpose is to facilitate the operation of informal social processes. Consequently, citizen involvement is a critical component of CPTED.

ADVANTAGES OF CPTED

It should not be presumed that CPTED can replace crime control techniques already in use. However, for certain crimes, CPTED does appear to offer several advantages not common to most existing strategies. These advantages which are listed below suggest that CPTED should be an important component of any comprehensive crime control program.

1. It is preventive. Most methods of crime control are reactive. They come into play only after a crime has been committed. It is difficult to control crime if we must allow it to occur before taking action. Since CPTED operates to reduce opportunity for crime, it may possibly provide a more cost-effective means of reducing crime.

2. It shifts initiative from the offender. Most crime control strategies leave the initiative for determining where and when crimes will occur to the offender. CPTED is one way to begin denying this freedom. Lacking this freedom, the offender may be forced to take greater risks and be less able to calculate these risks. This in turn may disincline criminal activity and increase the possibility of apprehension.

3. It has secondary benefits. CPTED endeavors to facilitate informal social processes. In so doing, it can provide incidental benefits to the quality of life in addition to reducing crime and its associated fear. For example, it is possible through physical design or redesign to encourage inhabitants to regain a proprietary interest in their environment and to foster productive neighborhood groups.

CPTED IN MINNEAPOLIS

At present Minneapolis is the focus of two CPTED projects. One project is part of a national CPTED demonstration under the direction of a consortium organized by the Westinghouse Electric Corporation and under the auspices of LEAA. Westinghouse will extend the concept of CPTED into four types of environmental settings: private residences, schools, transportation systems, and commercial areas. The Willard-Homewood neighborhood in Minneapolis was designated as the site for a residential demonstration program. As the Westinghouse document states, "The objectives of the Residential Demonstration Plan include not only the development and testing of strategies to reduce crime and the fear of crime, but also the development of a process that can be applied by other residential areas throughout the country."

The second project is being conducted by staff of the Governor's Commission on Crime Prevention and Control (GCCP&C). The project is a first attempt to develop and implement methods for applying CPTED on a state-wide basis. While the first stage of the project focuses on Minneapolis, the overall objective of the project is to make training and technical assistance in CPTED available to communities throughout the state.

The Minneapolis phase of the project involves the following activities:

1. Analysis of crime-environment relationships in Minneapolis.

2. Preparation of an overall CPTED plan for the city of Minneapolis including development of demonstration plans for selected neighborhoods.
3. Assistance in the implementation of demonstration plans.
4. Preparation of technical assistance programs for use by other areas of the city.

The remainder of this report describes the data to be used in analyzing crime-environment problems, and describes the process of selecting sites for demonstration CPTED plans.

ANALYSIS OF CRIME-ENVIRONMENT RELATIONSHIPS

Application of CPTED strategies will vary with the characteristics of the particular crime-environment problem. Thus, basic to the preparation of any CPTED plan is an analysis of the environmental components of the crime problem. This analysis includes examination of offense reports from police records, interviews with citizens concerning fear and victimization, and land use and census data.

OFFENSE DATA

Major portions of police offense reports are in narrative form. In order to statistically analyze the environmental components of crime problems, it was necessary to code this information into numerical form. Information was extracted from offense reports assigned by the

Minneapolis Police Department during the period July 1, 1974 through June 30, 1975. The data was collected from offenses reported across the entire city. With the exception of assaults, only those offenses which appear to be related to opportunity and which generally occur between strangers were considered. Data was extracted from some 22,000 offense reports, or almost sixty percent of all reports assigned during the sample year. Auto theft (where offense reports offered the least information), larceny and vandalism (crimes considered less severe) were sampled. The total number of reports read and coded was broken down as follows:

	Sample of offense reports coded	Number of offense reports coded
Assaults (including rape)	All	4,537
Auto theft	1 of 5	1,015
Burglary	All	10,331
Larceny	1 of 4	2,132
Robbery	All	2,682
Vandalism	1 of 4	1,212
TOTAL		21,909

FEAR AND VICTIMIZATION DATA

Because the fear of crime is as important a concern as crime itself, the project contracted for a survey of 1600 residents of Minneapolis. The overall sample was a composite of probability samples from the ten planning communities in Minneapolis. Interviews were person-to-person and were from 45-75 minutes in length.

Questions in the interview tapped the respondents' perception of his neighborhood, including the quality of life, and sense of belonging to his neighborhood; fear of crime, steps taken to secure the home against crime; reaction to police; and victimization.

LAND USE AND CENSUS DATA

Since CPTED is concerned with the effect of environmental factors on crime, it was essential to acquire information on social and physical environmental characteristics of the city. The information acquired from several sources included housing type and mix, location of commercial establishments, population density and age distribution. This information was obtained from the Property Management files of the Minneapolis Planning and Development Division and from the United States Bureau of the Census.

DEVELOPMENT OF A CITYWIDE CPTED PLAN

Analysis of these data on a citywide basis will document in the greatest detail to date the nature of the crime and fear problem in Minneapolis. Analysis of the data on a citywide basis will enable the city to prioritize these problems, both by crime type and by area. This prioritization will provide a framework for the systematic development of localized strategies and the systematic expenditure of funds.

In addition to suggesting priorities, this analysis will indicate broad categories of strategies which are applicable for varying crime

problems, and will suggest the relative merit and cost of those strategies. Because the crime problem varies by neighborhood, the analysis can suggest combinations of strategies which are most appropriate for different neighborhoods as well as different types of structures.

This analysis will be documented as part of the citywide CPTED plan for Minneapolis and should provide useful to other ongoing planning and development efforts. For example, fear data might suggest priorities for street lighting programs or improvements in park security. Crime analysis could contribute to the redesigning of streets, alternative deployment of police resources or the design of neighborhood housing and commercial rehabilitation projects. In addition, the analysis could result in recommendations for security standards in building codes.

Completion of this analysis and presentation of the plan to the city of Minneapolis is anticipated in October, 1976.

NEIGHBORHOOD DEMONSTRATION PLANS

PURPOSE OF NEIGHBORHOOD DEMONSTRATION PLANS

An integral element of the CPTED plan for Minneapolis is the development and implementation of neighborhood plans for selected areas in the city. These neighborhood plans will serve a number of purposes.

The primary purpose of these sub-plans will be to field test the CPTED process. While CPTED is a promising approach to crime reduction, it is a new concept and as such, there is much which is unknown

about its application and effectiveness. It is essential that CPTED be tested in a variety of settings before large amounts of public funds are invested in it. Implementation of CPTED in various settings on a demonstration basis will permit the identification and correction of problems that may exist in CPTED. Once corrected, these demonstrations will provide a model for the planning of CPTED programs for other areas of Minneapolis. In addition, these demonstrations can be used to evaluate the effectiveness of alternative CPTED strategies. The results of these evaluations will provide further guidance to the city for future implementation.

CRITERIA FOR NEIGHBORHOOD SELECTION

The intensive involvement of project staff required in each demonstration neighborhood limited the number of neighborhoods which could be selected as demonstration sites. Two primary criteria were considered in identifying demonstration neighborhoods. 1) Priority was given to areas where the level of crime was substantial. 2) The neighborhoods selected had to represent a variety of crime-environment settings in order to maximize learning and demonstration potential.

1. Level of Crime. This criterion was chosen for several reasons.

- a) These areas have the greatest need for assistance in controlling crime.
- b) The existence of a serious crime problem should be an advantage in securing citizen participation.

- c) To investigate crime-environment relationships requires a sufficient number of crimes to make any patterns discernable.
- d) To demonstrate the effectiveness of CPTED strategies in an area, it is important that a fairly high level of crime exist. When crime rate is low, random fluctuations in crime occurrences would make evaluation of crime control efforts more difficult.

In searching for demonstration sites, the unit of analysis used was the census tract. This unit of analysis was chosen because of the availability of data at the census tract level and because the census tract is an appropriately sized area for a demonstration site. In order to determine which census tracts have substantial crime problems all census tracts were compared on the basis of the rate of a) residential burglary, b) commercial burglary, c) commercial robbery, and d) street crime. Street crime includes rapes and assaults, street robbery, and those larcenies such as purse snatching which involve direct theft from persons and which are committed in exterior spaces. Street crimes which did not involve strangers were excluded. These crimes were chosen because they are crimes of opportunity, and they seem to be most associated with fear of crime.

Crime is usually measured on the basis of number of crimes per 1000 population. The purpose of course, is to standardize the crime rate, taking into account variations in the population. However, population is an inappropriate base for many crimes and as such is

misleading. For example, people are not burglarized, rather their homes are burglarized. Accordingly, a more appropriate measure of the burglary problem is one based on the opportunity for burglary, that is, based on the number of dwelling units. Likewise, commercial crimes are not committed against the population in general, but against commercial establishments. A clearer picture of the commercial crime problem would be a rate based on opportunity, i.e., number of commercial establishments. Even crimes against persons, expressed as a number per 1000 persons is misleading as the population of an area is not stable during a twenty-four hour period. For example, the population of the central business district swells during the day and on weekend evenings creating more potential victims of street crime. But because so few people actually live in the central business district, the rate of street crime in that area is greatly exaggerated.

Opportunity based crime rates are a more meaningful measure for comparing the relative risk of crime in different areas. However, obtaining data from which to determine opportunity was practical only in the case of residential burglary. For the remaining three crimes--street crime, commercial burglary, and robbery--simple frequencies were used to rank census tracts. It was felt that simple frequency was a better criterion than rates based on population as the latter rate distorts the true crime picture. With the exception of residential burglary, the frequency of crime is low on a tract-by-tract basis. Using the frequency of these crimes to rank census tracts ensured that a demonstration area

has an adequate level of crime to demonstrate the effectiveness of CPTED strategies.

In sum, simple frequency figures were used to rank current tracts on all crimes except residential burglary. A ratio of offenses to residential units was used to rank tracts on residential burglary. Tracts which did not fall within the top quartile on at least one of the rankings were excluded from further consideration.

2. Variety of Crime-Environment Settings. If CPTED were a proven approach to crime reduction, the level of crime could serve as the single selection criterion, and CPTED plans could be developed for areas with the highest crime occurrence. But CPTED is a new approach to crime reduction and there are many gaps in what is known about its application to different crime-environment problems. Under this condition, the existence of a substantial crime rate is only a necessary, not a sufficient criterion for neighborhood selection. Additional criteria were developed to ensure that neighborhoods were selected to represent a variety of crime-environment problems, not simply a high level of crime. The inclusion of all possible crime-environment issues, of course, was not possible. But major dimensions of crime-environment problems could be sampled. The following dimensions were considered in the selection process:

- a. Type of Crime Problem
- b. Land Use
- c. Level of Community Organization

a. Type of Crime Problem

Different types of crime problems can be expected to require different strategies. It was, therefore, considered important that the demonstration sites have different predominant crime patterns.

Outside the central business district, commercial crime does not cluster within a neighborhood setting but rather is scattered among isolated commercial establishments. However, adjacent to and sometimes forming the boundaries of neighborhoods, are commercial strips which do have a crime problem. In order to deal with commercial crime in a community setting, it was important that commercial strips with commercial crime problems be included as part of the demonstration.

b. Land Use

Different environmental settings call for different CPTED strategies even when the type of crime remains the same. For example, stopping burglary in an apartment building would require different strategies than would stopping a burglary problem in an area of single family homes. Consequently, demonstration sites were sought that provided examples of different environmental settings. Some of the settings considered important were parks, schools, housing for the elderly, various types of commercial establishments, housing with different density and design features.

c. Level of Community Organization

As indicated above, the demonstrations focus on applying strategies. Application of many CPTED strategies is impossible without

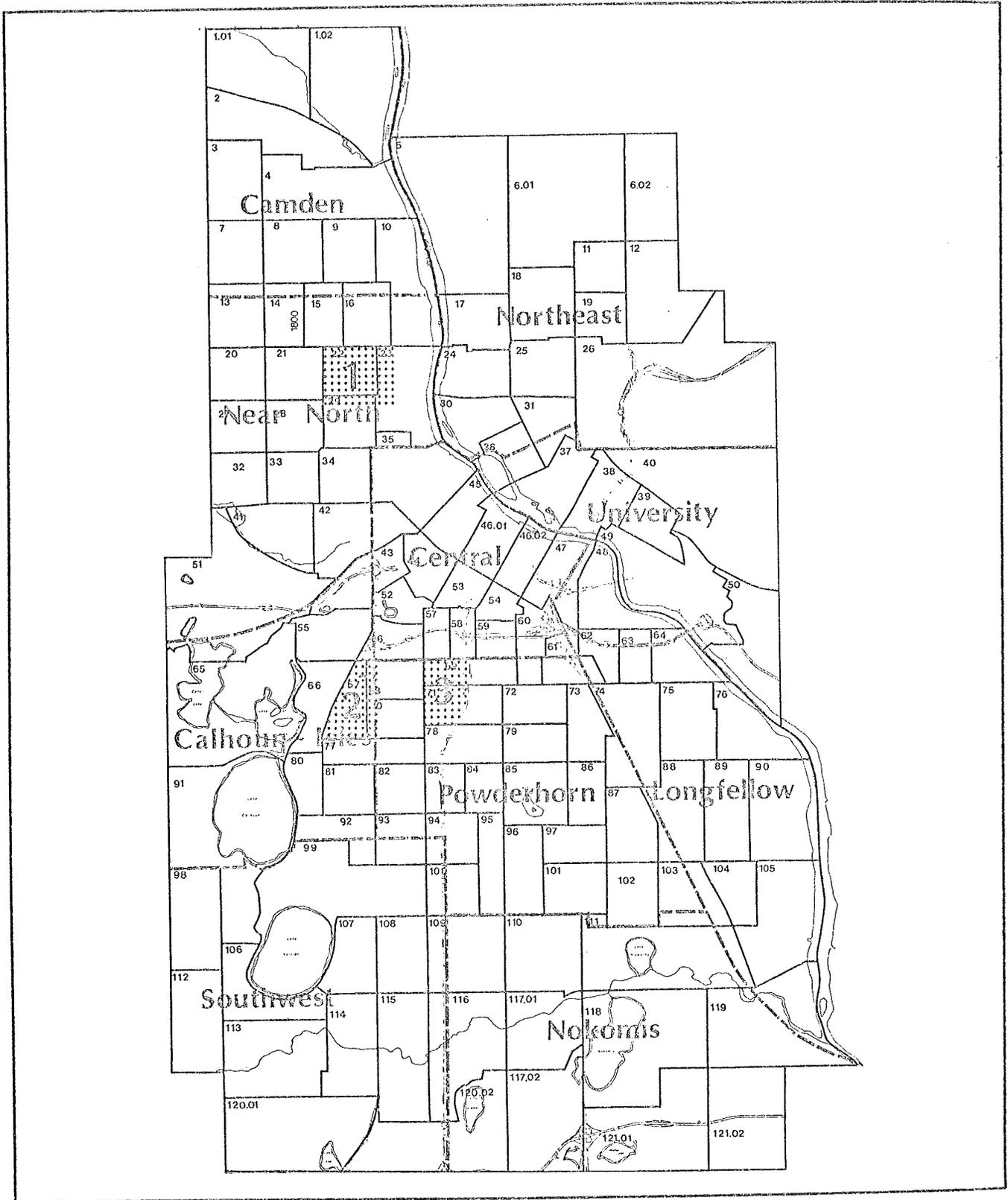
community support. Generating community support through community organizing is a major effort and one which could divert efforts from the primary focus of the project, which is developing and implementing crime prevention strategies. In order to keep the community organization effort within manageable bounds, areas in which the organizing task seemed particularly extensive were avoided. However, areas recommended for demonstration work represent a variety of organizational arrangements.

NEIGHBORHOODS SELECTED FOR DEMONSTRATION SITES

Three separate demonstration sites have been identified. Each has a substantial crime problem, and in combination these sites represent a variety of crime-environment problems. The locations of the sites are shown on the following map of the city of Minneapolis. These sites are located within the Hawthorne, Whittier North, and Lowry Hill East neighborhoods. The following paragraphs describe the sites and indicate some of the features which contribute to their value for demonstration purposes.

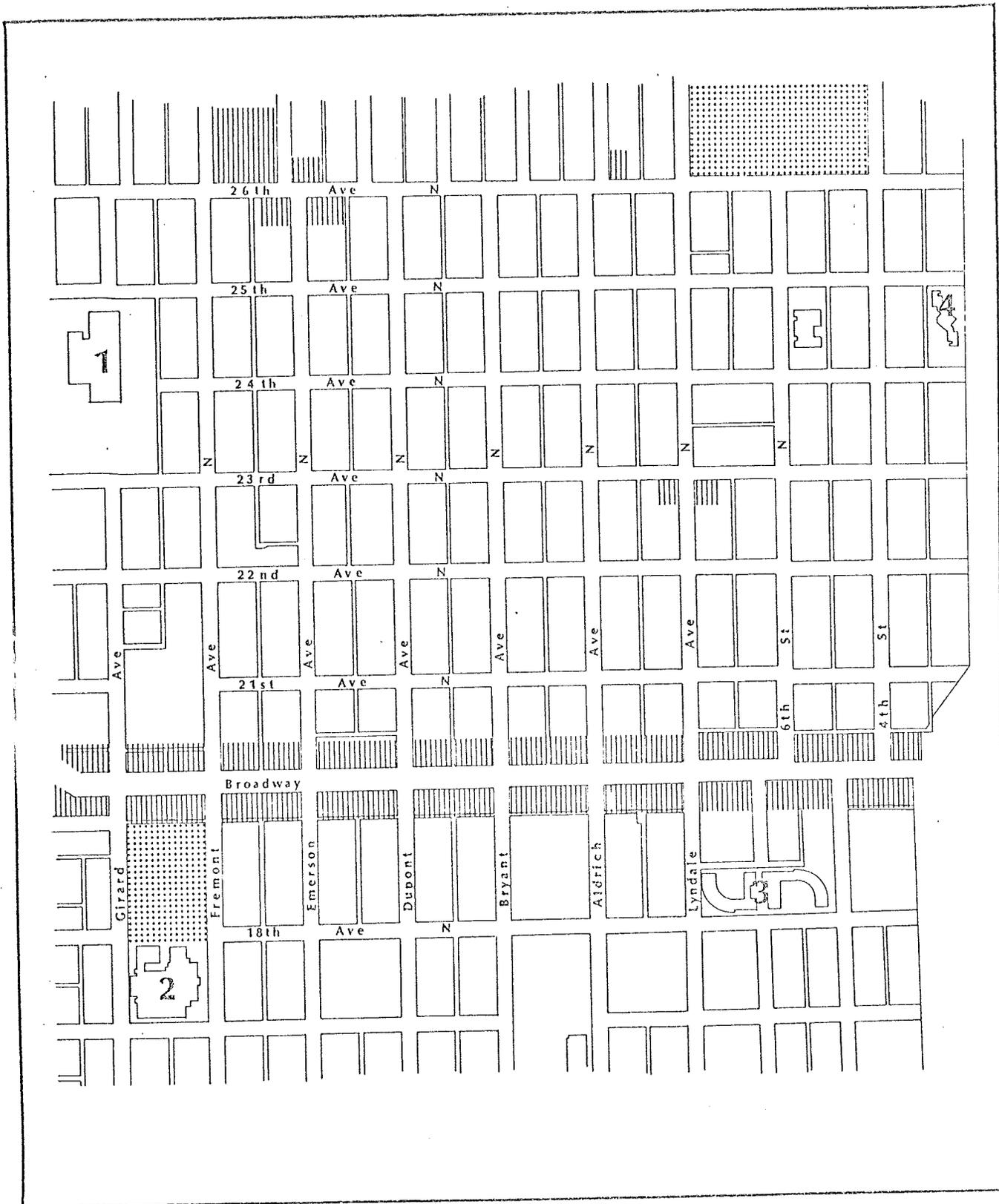
SITE 1: HAWTHORNE NEIGHBORHOOD

Site 1 consists primarily of Census Tract 22. For demonstration purposes, the boundary has been expanded two blocks south of Broadway to include the commercial development along Broadway and 600-18th Avenue North, which is a Housing and Redevelopment Authority housing development for Senior Citizens. The boundary to the west has been extended



CITY OF MINNEAPOLIS

- 1 Hawthorne Neighborhood
- 2 Lowry Hill East Neighborhood
- 3 Whittier Neighborhood



 Parks

 Commercial

- 1 North Star Elementary School
- 2 North High School
- 3 600-18th Avenue North Elderly Housing
- 4 2415-3rd Street North Elderly Housing

SITE 1 - HAWTHORNE NEIGHBORHOOD

one block west of Girard to include the site of North Star Elementary School.

The area consists largely of single family and duplex housing. A high proportion of the housing is owner occupied. This census tract ranked second in frequency of residential burglary in calendar year 1975. For the study period from July, 1974, through June, 1975, this census tract had 130 residential burglaries and ranked sixth in the city for burglary per opportunity (one in eight units was burglarized). As shown in Table 1, the tract has ranked high in residential burglary in previous years as well. Data in Table 1 also indicate that the area has a street crime and a commercial burglary problem. For both of these crimes, Tract 22 ranked in the top quartile of tracts for the city. A substantial portion of the commercial burglaries occurred along Broadway.

Development of CPTED design strategies can be integrated with a tax increment redevelopment effort along Broadway. While there is no central resident organization in this area, the neighborhood has a system of block clubs which can serve as the basis for citizen involvement.

SITE 2: LOWRY HILL EAST NEIGHBORHOOD

This area consists largely of Census Tract 67. However, the boundary has been expanded one block to the east to include the commercial establishments along Lyndale Avenue. These establishments have a substantial robbery problem. The boundary of the tract has also been expanded to the west to include the west side of Hennepin Avenue.

TABLE 1

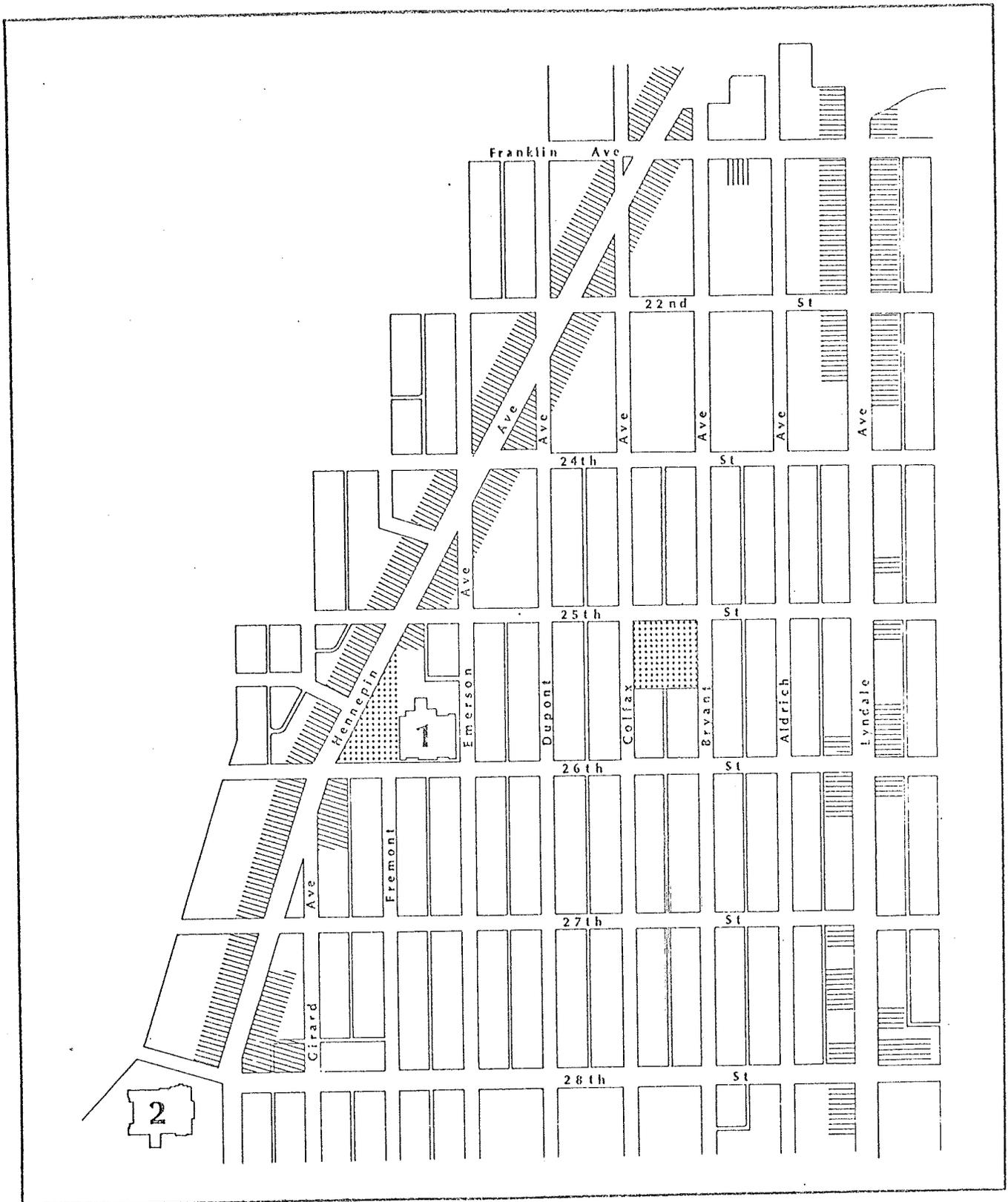
RANKING OF CENSUS TRACT FOR SELECTED CRIMES

JULY, 1974 - JULY, 1975				CALENDAR YEAR		
CENSUS TRACT	RANK PER OPPORTUNITY	RANK FREQUENCY	FREQUENCY	1975 RANK FREQUENCY	1974 RANK FREQUENCY	1973 RANK FREQUENCY
<u>Residential Burglary</u>						
22	5	8	130	2	10	*
67	30	1	167	1	1	1
69	*	*	61	*	*	*
71	*	2	150	8	2	5
<u>Commercial Burglary</u>						
22	a	16	29	9	12	25
67	a	*	12	*	*	*
69	a	30	19	15	*	15
71	a	22	26	16	5	17
<u>Commercial Robbery</u>						
22	a	*	3	*	26	24
67	a	23	7	9	*	*
69	a	*	5	12	*	4
71	a	18	10	*	23	16
<u>Street Crimes</u> ^b						
22	a	21	41	10 ^b	13 ^b	27 ^b
67	a	23	39	25	*	26
69	a	6	67	7	8	16
71	a	9	56	10	13	27

*Rank below the top quartile.

^a Not yet available on "per opportunity" basis.

^b The calendar year data are for street robbery only. They do not include rape, assault and street larceny offenses included in the other data.



SITE 2 - LOWRY HILL EAST NEIGHBORHOOD

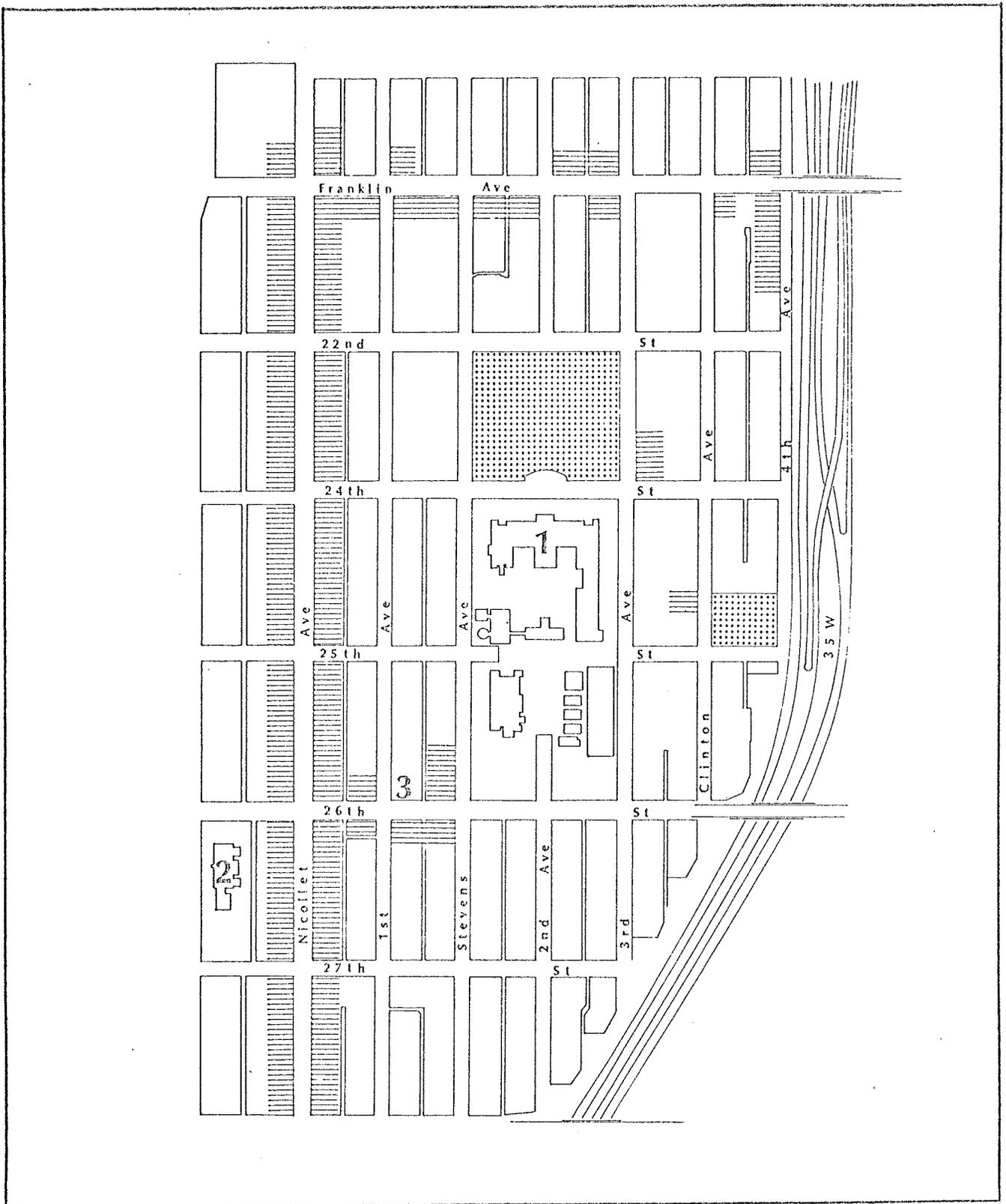
-  Parks
-  Commercial
- 1** Jefferson School
- 2** West High School

This section of Hennepin Avenue has a cluster of commercial burglaries. Housing in this area is a mix of single-family and multi-family structures with a high housing density. During the study period, this tract ranked thirtieth in terms of burglaries per opportunity with one in sixteen units being burglarized. However, for calendar years 1973-1975, this tract ranked highest in the city in frequency of residential burglary with 167 residential burglaries occurring during the period under study.

Crime prevention design efforts in this area can tie into the Neighborhood Emphasis Program, which is presently underway and supported by Community Development funds. The area also offers the advantage of a strong neighborhood organization which has already begun work on crime problems.

SITE 3: WHITTIER NEIGHBORHOOD

This site consists of the portions of Census Tracts 69 and 71 which lie west of Highway 35W. It includes the Minneapolis Institute of Arts and Washburn-Fair Oaks Park as well as a variety of types of multi-family housing and some single-family housing. Among the multi-family structures are a number of developments for senior citizens. Like Site 2 this site has a high residential density. Consequently, while the number of residential burglaries is quite high, the rate per opportunity is only slightly above average for the city. However, for the other three classes of crime, Site 3 ranks in the top quartile of tracts. The most severe crime problem appears to be street crime.



SITE 3 - WHITTIER NEIGHBORHOOD

-  Parks
-  Commercial
- 1** Minneapolis Institute of Arts
- 2** Whittier Elementary School
- 3** 2533-1st Avenue South Elderly Housing

Both tracts climbed in rank on street crime from 1973 to 1974 and again from 1974 to 1975 to the point where they both ranked among the top 10 tracts by the end of 1975.

Endowment for the Arts funds and Community Development funds have been earmarked for this area and the area is the focus of an intensive development planning effort by the city. These factors should aid implementation of any design recommendations in the CPTED plan. There is an existing resident organization which has been involved in a range of neighborhood projects.